

Notes on a MS. Eclipse Volume. By the Rev. S. J. Johnson, M.A.

The accompanying MS. volume * gives eclipses in this country for a period of about 2,000 years, from A.D. 538 to A.D. 2500, being recorded ones of both luminaries from the date of the first in 538 to 1200; all solar eclipses visible here from A.D. 1200 to A.D. 2200, omitting a very few in which scarcely a tenth of the Sun's diameter is obscured, including lunar ones for a certain period and large solar eclipses from A.D. 2200 to A.D. 2500.

It will be seen that during the 1000 years from A.D. 1200 to A.D. 2200 there are only eight cases of an interval so long as that through which we are now passing (May 1882 to June 1890) without a solar eclipse visible in England generally.

The only solar eclipses total at Greenwich in the period of 2000 years are those of 878 and 1715, as has been before remarked, unless, perhaps, that of 664 is an instance. Between the eclipse of 1715 and the preceding one that most nearly approached the total phase at Greenwich, viz. that of 1140, there is an interval of 575 years and a month. A similar interval reckoned forwards from 1715 brings us to A.D. 2290, when there is an eclipse soon after sunrise that seems total in the extreme north of the kingdom. A similar interval reckoned previously to 1140 brings us back to February 565, when the Sun appears to have been totally eclipsed across this country just before setting. Though no ancient chroniclers appear to record this directly, yet Matthew of Westminster says, "In this year there were seen many signs in the Sun and Moon."

Melplash Vicarage, Dorset:

April 28.

* This volume is placed in the Library.

Observations of Saturn and δ Geminorum, Jan.-Feb., 1887. By John Tebbutt.

The accompanying positions of *Saturn* have been deduced from comparisons of the planet with the clock star δ *Geminorum* about the time of their conjunction. The measures were made with an excellent position filar micrometer on the Grubb 8-inch equatorial refractor, transits of the planet's western limb and the star being observed by means of a half-second chronometer across the single position thread in the meridian, and differences of Declination obtained between the star and the planet's south limb. The micrometer screws have been well tested, one revolution of the screw employed being 17".869. The differential Right Ascension and Declination have been corrected for refraction. Corrections due to the planet's semi-diameter (see *Nautical Almanac*, page 282) have been applied to these coordinates and to the times of transit of the limb. The apparent place of the star has been adopted from the *Nautical Almanac*, and the places of the planet have been finally corrected for parallax. As the definition and steadiness of the images were all that could be desired, I have no doubt that the concluded positions will bear favourable comparison with those derived from meridian observations. The last two columns of the table subjoined exhibit a comparison of the results with the places interpolated from the ephemeris on page 258 of the *Nautical Almanac*.

	Windsor Mean Time.			Planet's Centre—Star $\Delta\alpha$			Comp.	Planet's Geocentric Apparent δ			Obs.—N.A.		
	h	m	s	m	s			h	m	s	α	δ	
1887. Jan. 30	10	35	10	+1	58	32	9	7	15	21.79	+22 10 52.1	s —0.10	—1.9
Feb. 1	10	3	46	+1	22	15	20	7	14	45.61	+22 12 11.8	—0.11	—0.7
" 8	9	37	38	—0	36	77	14	7	12	46.66	+22 16 30.0	—0.19	—0.5
" 9	10	9	37	—0	52	91	17	7	12	30.53	+22 17 5.1	—0.18	—0.5
" 14	10	28	54	—2	6	86	12	7	11	16.56	+22 19 46.9	—0.19	—0.5

Windsor, N.S. Wales: 1887, March 12.